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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
BALASUBRAMANIAN, VENKATARAMAN

ART UNIT	PAPER NUMBER
1624	8

DATE MAILED: 12/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/779,604	GUPTA ET AL.	
	Examiner	Art Unit	
	Venkataraman Balasubramanian	1624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 September 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *7* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Applicants' response, which included amendment to claims 1-2,4-5, 16 and addition of new claims 20-31, filed on 9/23/2002, is made of record.

Claims 1-31 are now pending.

In view of applicants' response, the following apply.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Following reasons apply. Any claim not specifically rejected is rejected as being dependent on a rejected claim.

1. Recitation of the term "reaction promoter" including" in claim1 and other dependent claims, renders these claims indefinite. The definition of this term in specification includes a variety of compounds including solvents and the proviso at the end of claim 1 appears to exclude solvents. It is not clear what is embraced as "reaction promoter". Furthermore, there is no guidance as to when a solvent is not a "reaction promoter" since often the polarity of the solvent influence the reaction. In addition, one trained in the art may use a mixture of solvents and it is not clear in such situation what production sought. Also reading claim 4 one would assume that solvent are indeed "reaction promoter". This is

further supported by the fact that applicants are claiming "ether" as reaction promoter and then ether as solvent in claim 5.

2. Recitation of "carbonyl" in claim 4 is indefinite as carbonyl is a group and not a compound. Note what precedes "carbonyl" are generic compounds.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fritzsche et al. US 1,551,095 for reasons of record. To repeat:

Fritzsche et al. teaches several tris aryl substituted triazines from cyanuric halide with α-naphthol and other aromatics in presence of condensing agents such as aluminum chloride or sulfuric acid in presence or absence of solvents. See formula shown on col. 1 and the definition of A and B. Note the definition of permits the process for making instant compound of formula III. Also note on line 33-38, Fritzsche et al. teaches the use of catalyst and solvents for the reaction. See example 1 and 2 where use aluminum chloride and sulfuric acid is taught respectively. Particularly note in example 2 the advantage of using sulfuric acid is taught. Note in example 3, use of tetrachloroethane is taught, which can be treated, according to instant specification, as a reaction promoter and solvent. See example 1 and 2 where use aluminum chloride and sulfuric acid is taught respectively.

Instant claims differ from Fritzsche et al. in reciting a reaction facilitator for the reaction.

However, Fritzsche et al. teaches use of sulfuric acid to accelerate the reaction as well as a condensing agent for the reaction and tetrachloroethane as solvent for the reaction. But as noted before these are reaction promoters and with the Lewis acid used would constitute reaction facilitator. Furthermore, Fritzsche et al. teaches use of sulfuric acid or aluminum chloride as catalyst and advantage of using little sulfuric acid in the said reaction. Hence one trained in the art would be motivated to use aluminum chloride with sulfuric acid to accelerate the reaction.

Thus one having ordinary skill in the art at the time of the invention was made would have been motivated to employ the process taught by the prior art to the starting materials and reactants including various aromatic as permitted by the definition of A and or B and expect to obtain the desired product because he would have expected the analogous starting materials and reactants react similarly. It has been held that application of an old process to an analogous material to obtain a result consistent with the teachings of the art would have been obvious to one having ordinary skill. Note In re Albertson 141 USPQ 730 especially reaffirmed on last page and In re Kuehl 177 USPQ 250.

Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardy et al. US 3,118,887 in view of Fritzsche et al. US 1,551,095 for reasons of record. To repeat:

Hardy et al. teach a process for making tris aryl triazines which include tris resorcinyl triazines claimed herein. See formula I and preferred formula II on col. 1-2. Note the definition of substituents in the aryl ring include hydroxy and alkoxy (ie. resorcinol and its derivatives) claimed herein. Note Hardy et al. teach the process of making these compounds on col.2 line 64-72 and col. 3 lines 1-13. Particularly, note Hardy et al. teaches, for unsymmetrical trisaryl substituted triazines, isolation of intermediates particularly, bisaryl chloro triazine as claimed herein. Note process involves the use of acid catalyst. Note Hardy et al teaches acid catalyst such as aluminum chloride. See col. 5-10 for the experimental conditions. Note the explicit teaching of one or more equivalents of the aromatic compound with cyanuric chloride and then use of the intermediate for further reaction. See Examples 2, 4, 8 and 12 for experimental details which includes solvents, Lewis acid and reaction conditions. Particularly see examples 2, 8 and 12. Note in example 2 and 8 carbon tetrachloride is used which qualifies as reaction promoter and as solvent for the reaction.

Hardy differs from the instant claims by illustrating only use of aluminum chloride as acid catalyst for the reaction but not showing use of any other acid catalyst generically taught and not teaching use of these acid catalysts as reaction promoters.

Fritzsche et al. as noted above teaches use of acid catalyst- a protic acid such as sulfuric acid. In addition, Fritzsche et al. teaches acceleration of the rate of reaction with sulfuric acid and use of tetrachloroethane as solvent.

Furthermore, starting materials are analogous in that they are cyanuric chloride or 6-halo-2, 4-bisaryl triazine and aromatics including phenols such as resorcinol and -

naphthol. Thus one having ordinary skill in the art at the time of the invention was made would have been motivated to combine both the primary and secondary references and employ the process taught by these prior art to the starting materials and reactants including the reaction conditions such as temperature and mole ratio etc. and expect to obtain the desired product because he would have expected the analogous starting materials and reactants react similarly. It has been held that application of an old process to an analogous material to obtain a result consistent with the teachings of the art would have been obvious to one having ordinary skill. Note In re Kerkhoven 205 USPQ 1069.

These rejections are same as made in the previous office action except that the newly added claims are also rejected herein.

Applicants' argument citing MPEP 2143.03, In re Royka is considered but deemed as not persuasive.

Applicants argue that all limitations are not met with in Fritzsche et al. which is not entirely correct.

Fritzsche et al. teaches as discussed in the previous office action either with or without use of condensing agents such as aluminum chloride or sulfuric acid in various solvents including those claimed in the instant claims as solvent and as reaction promoter.

In Example 1, Fritzsche et al. teaches use of aluminum chloride.

In Example 2, Fritzsche et al. teaches use of no condensing agent.

In Example 2, Fritzsche et al. teaches use of sulfuric acid at the early stage to accelerate the reaction.

Hence, in view of equivalency teaching that the reaction can be performed neat, or with condensing agents, one trained in the art would have motivated to use an reaction accelerator such as sulfuric acid.

Hence this rejection is proper. Hardy teaches that acid catalyst and states specifically aluminum chloride. Hence one trained in the art would be motivated to combine the teachings of the two art.

Hence both these rejections are proper and are maintained.

Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardy et al. US 3,118,887 and Stevenson et al. US 6,242,598 in view of Fritzsche et al. US 1,551,095.

Teachings of Hardy et al. and Fritzsche et al. as discussed in the above 103 rejection is incorporated herein. Whereas Fritzsche et al. teaches explicitly sulfuric acid, there are no generic teachings to include all protic acids.

Stevenson et al. teaches use of several protic acids for the synthesis of structurally similar triazines. See col. 2, lines 13-21 wherein several protic acids are taught. Also note the reactions shown therein and note the equivalency of the active leaving groups include halogen, aryloxy and alkoxy. See lines 19-21. See entire document. In addition see col. 3lines 1-7 for solvents for the reaction, col. 7, lines 20-35 for analogous art, col. 10, lines 48-65 wherein a combination of Lewis acid and protic

acid is taught. Note the same on col. 14, lines 10-15, col. 15, lines 62-64, and col. 20, line 1-4. See examples 1-18 on col. 20-25 for process details.

Thus Stevenson clearly teaches a combination of protic acid with Lewis acid for the said triazine synthesis.

The instant process differs in reciting various Lewis acids in combination with reaction promoters.

However, the processes taught by all these references are analogous.

Thus one having ordinary skill in the art at the time of the invention was made would have been motivated to combine both the primary and secondary references and employ the process taught by these prior art to the starting materials and reactants including the reaction conditions such as temperature and mole ratio etc. and expect to obtain the desired product because he would have expected the analogous starting materials and reactants react similarly. It has been held that application of an old process to an analogous material to obtain a result consistent with the teachings of the art would have been obvious to one having ordinary skill. Note In re Kerkhoven 205 USPQ 1069.

This action is not made FINAL.

Reference cited in the Information Disclosure Statement (paper # 7) is made of record.

Conclusion

Any inquiry concerning this communication from the examiner should be addressed to Venkataraman Balasubramanian (Bala) whose telephone number is (703)

305-1674. The examiner can normally be reached on Monday through Thursday from 8.00 AM to 6.00 PM. The Supervisory Patent Examiner (SPE) of the art unit 1624 is Mukund Shah whose telephone number is (703) 308-4716.

The fax phone number for the organization where this application or proceeding is assigned (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

V. Balasubramanian

Venkataraman Balasubramanian

12/13/2002